

U.S. Patent Application Serial No. **10/763,258**
Amendment filed December 11, 2006
Reply to OA dated September 11, 2006

REMARKS

Claims 1 and 3-16 are presented for examination. Claim 2 has been cancelled. New claim 16 defines a further embodiment of the present invention. Claims 1, 6, and 7 have been amended in order to more particularly point out and distinctly claim the subject matter to which the applicant regards as his invention. In particular, amended claim 1 contains the limitations of original claim 2, and is supported by p. 10-11 of the specification. New claim 16 is based on data obtained by evaluating the water resistance tests in Examples 5 to 8. (p. 31-38, Specification).

The applicant respectfully submits that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **September 11, 2006**.

Claim 1 is rejected under 35 U.C.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the Examiner found indefinite the terms "silazane type" and "chlorosilane type." In accordance with the Examiner's suggestion, claim 1 has been amended to remove the phrase

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"type." In particular, amended claim 1 defines "silazane type" and "chlorosilane type" as "a treatment agent of silazanes" and "a treatment agent of chlorosilanes," respectively.

Claims 1-10 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Adachi, et al., (U.S. Patent No. 6,060,154).

Claim 2 has been cancelled.

Adachi discloses a coating solution for forming a selectively transmitting film comprising a dispersion of fine particles having an average particle diameter of 100nm or less. In particular, **Adachi** teaches a dispersion containing lanthanum boride and alkoxides of silicon.

As amended, claim 1 contains the limitations of original claim 2 and recites hexaboride particles where surface treatment agents are heated and dried. (*See* original claim 2; p. 10, line 13 to p. 11, line 2, Specification). **Adachi** fails to teach or suggest the claimed hexaboride particles because the reference fails to disclose heating and drying surface treatment agents. Applicant respectfully submits that this distinction is patentable because heating and drying the surface treatment agents results in hexaboride particles having unexpectedly improved water resistance.

Examples 1 to 8 discussed on p. 23-29 of the specification show that hexaboride particles recited in amended claim 1 achieve unexpected improvements in water resistance. (*Also see* the table below containing the results of Examples 1 to 8). Examples 1 to 4 relate to hexaboride particles where surface treatment agents have not been heated and dried, and Examples 5 to 8 relate to hexaboride particles where surface treatment agents have been heated and dried. Contrary to the claimed invention, **Adachi** fails to teach subjecting a surface treatment agent to heating-drying treatment and, therefore, the invention of **Adachi** is akin to Examples 1 to 4.

In Examples 1 to 8, various sample films which had been formed with hexaboride particles dispersed therein were left for 4 days in an environment of 60C and 90% RH and, thereafter, the films were checked with respect to “the rise in visible-light transmittance,” “the rise in solar radiation transmittance,” and “the rise in transmittance in a near infrared region.” The results, which can be found below, show that Examples 5 to 8 (hexaboride particles where surface treatment agents had been heated and dried) achieved marked improvement in terms of water resistance over Examples 1 to 4 (hexaboride particles where surface treatment agents had not been heated and dried).

Furthermore, the data below also confirm that hexaboride particles of Examples 5, 7, 8, where heating-drying treatment had been performed at 400°C, showed marked improvement in water resistance when compared to Example 6, where similar treatment has been performed at 200°C.

E xample	Rise in visible- light trans- mittance	Rise in solar- radiation trans- mittance	Rise in trans- mittance in near infrared region
1	1.3 points	2.0 points	2.3 points
2	1.2 points	2.0 points	2.3 points
3	0.5 point	0.9 point	1.0 point
4	0.5 point	0.8 point	1.0 point
5	0.1 point	0.1 point	0.2 point
6	0.3 point	0.6 point	0.6 point
7	0 point	0 point	0 point
8	0 point	0 point	0 point

Clearly, the water resistance displayed by hexaborides defined in claim 1, shown by Examples 5 to 8, is not inherent to the teachings of **Adachi**, which is akin to Examples 1 to 4.

Regarding claim 5, **Adachi** fails to teach the claimed weight relationship between hexaboride particles and surface treatment agent *in terms of the silicon contained in the surface treatment agent*. Specifically, claim 5 recites that “said surface treatment agent is in a proportion of from 0.01 part by weight to 100 parts by weight based on 1 part by weight of the hexaboride particles *in terms of the silicon contained in the surface treatment agent*.” In other words, in setting the proportion of surface treatment agent to hexaboride particles, the weight of the surface treatment agent is converted to the weight of the silicon contained therein.

In contrast, in column 4, lines 10-15, **Adachi** discloses that “a coating solution for forming such a film contains one or more of *alkoxides* as of silicon, zirconium, titanium and aluminum, and partially hydrolyzed polymers thereof in water or alcohol, preferably in the amount of *40% by weight or less based on oxides* formed upon heating.” That is, the content of the metal alkoxide in the coating solution is set to be based on the weight of the oxide derived after heating and in a proportion to the entire coating solution. Clearly, the proportion of factors taught by **Adachi** is different than that recited in claim 5.

Adachi fails to teach or suggest the present invention recited in claims 1, 3-10, and 12-14 because the reference does not disclose *heating and drying* the surface treatment agents, and does not teach the claimed weight relationship between hexaboride particles and surface treatment agent

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in terms of the silicon contained in the surface treatment agent.

It is respectfully requested that this rejection be reconsidered and withdrawn.

Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi.

Claims 11 and 15 depend on amended claim 1. For the reasons discussed above, in particular that **Adachi** fails to teach or suggest *heating and drying* the surface treatment agents, and does not teach the claimed weight relationship between hexaboride particles and surface treatment agent *in terms of the silicon contained in the surface treatment agent*, it is respectfully requested that this rejection be reconsidered and withdrawn.

New claim 16 contains a further embodiment of the present invention, and depends on amended claim 1. For the reasons discussed above, it is respectfully submitted that **Adachi** fails to teach or suggest the present invention recited in new claim 16.

In view of the aforementioned amendments and accompanying remarks, claims 1 and 3-16, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicant's undersigned attorney at the telephone number

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indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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